The
Cadastral and Mapping Training Staff

AVULSION ACCRETION AND RELICTION SURVEYS

COURSE NO. 9600-ST-15

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of this Department of natural resources.

The Department works to assure the wisest choice in managing all our resources so that each shall make its full contribution to a better United States now and in the future.

AVULSION, ACCRETION AND RELICTION SURVEYS

WORKBOOK

COURSE NUMBER 9600-ST-15

1981

Prepared by

THE CADASTRAL AND MAPPING TRAINING STAFF

Bureau of Land Management

in conjunction with

Cantu Advertising & Graphics

Denver, Colorado

Introduction

Since no two individuals learn at the same rate, this workbook material is designed for individual self-paced instruction.

Instructions

This workbook is to be used in conjunction with the slide/sound presentation Avulsion, Accretion, and Reliction Surveys. This workbook is not intended to be a complete course in itself but can serve as a good reference source after the slide/sound presentation is completed. The workbook follows the example of previous audio-visual presentations and workbooks. To receive maximum benefit, it is IMPORTANT that you follow the order of activities as indicated below:

STEP 1. Arrange the audiovisual equipment in the operating position and load the visuals and cassette tape. The title frame should be the first visual in view and the title of the program referred to in the narration should correspond to that on the title frame.

STEP 2. Concentrate on listening and viewing as the program continues. Pauses occur in the narration to refer you to the intended exercises in the workbook. You may stop or rewind the tape or turn the visuals back anytime if it aids your learning.

Instructions, Continued

STEP 3. Stop the audiovisual material at intervals as directed in the narration, then complete the review exercises in your workbook, following provided instructions. Check your answers with those provided in the workbook. If you missed more than the suggested maximum for the review exercises, you should turn the tape and visuals back and repeat that Lesson before attempting the next Lesson.

STEP 4. Follow the sequence of Steps 2 and 3 above until you have completed the series of review exercises.

Objectives

When you have completed this lesson series on Avulsion, Accretion, and Reliction Surveys, you will be able to do the following with over 85 percent accuracy:

_____1. Recognize important historical roots of Riparian Rights.

_____2. Recognize important historical roots of U.S. navigability concepts.

_____3. State important legal backgrounds for avulsion, accretion, and reliction surveys.

_____4. Describe the particular problems associated with avulsion, accretion, and reliction surveys.

_____5. Recognize unique solutions for avulsion, accretion and reliction surveys.

LESSON 1 - Avulsion, Accretion, and Reliction Surveys

REVIEW QUESTIONS

1. The objectives of this section are to 1.) _____ 2.) _____ 3.) _____ and 4.) _____.
2. A surveyor's interest in U.S. riparian laws can be traced historically to _____.
3. Up until sixteenth century England, there appeared to be little interest in _____.
4. In the middle 1500's, Thomas Digges wrote a treatise that argued that _____.
5. Digges' hypothesis was not widely accepted until it reappeared in 1670 in an important document titled DeJure Maris, written by Sir Matthew Hale. From Hale's work it was presumed that _____ _____.
6. The tidelands ownership presumption was part of the English inheritance of the Thirteen Colonies. In the 1845 Pollard v. Hagan case, it was ruled that states which subsequently entered the Union did so on an _____ _____ basis and were therefore entitled with the tidelands.
7. With respect to riparian surveys, two basic issues include 1.) _____ _____ and 2.) _____ _____.
8. In the United States, navigable means _____.
9. Ownership of the bed of a watercourse depends on _____ in most states.

10. In The Propeller Genesee Chief v. Fitzhugh case in 1851, the Supreme Court decision extended navigability _____.

11. The Daniel Ball decision in 1870 provided clearer definition of the navigability of United States waters. Navigable rivers in law are _____ _____ _____ and used as _____ _____ _____.

12. In The Barney v. City of Keokuk decision of 1876, the beds of inland navigable waters _____.

13. In most cases, a watercourse is deemed navigable in terms of public use or commerce. However, it does not necessarily follow that the bed of the watercourse is in State ownership. State two exceptions.
1.) _____ 2.) _____.

14. Much navigability status in Alaska and the lower 48 states has been determined by 1.) _____ and 2.) _____.

15. A navigability determination must be considered by the land surveyor when _____.

16. The bed of a navigable river belongs to _____ while the bed of a nonnavigable river belongs to _____.

17. A land area has formed after statehood from the bottom of a river bed and has gradually grown by accretion to join a Federally-held riparian tract on one of the river banks. In the majority of states, if the river is navigable, the new area belongs to the _____ since the accretion started from the _____ _____ _____.

18. In the case presented in question 17, had the accretion started from the bank of the Federal tract, it would be _____ owned since the bed is merely a receiver of the accretion, and not the originator.

19. In the case presented in question 17, the same accretion originating from either the bank or the bottom of the bed within the stream half on the Federal side of a nonnavigable river would be _____ owned.

20. The question of ownership to an accretion between a private owner and the state has been particularly troublesome. In Hughes versus State of Washington, the court stated that the grantee of land bounded by _____ _____ acquires a right to any _____ _____.

21. Another water boundary case which seemed to affirm the Hughes decision was The Bonelli Cattle Company v. Arizona. This case evolved from a 1910 Federal patent to land on the east bank of the Colorado River. Arizona maintained that under the _____ _____, Arizona had the right to apply State law to the ownership question.

22. In question 21, the Supreme Court decision stated that The Equal Footing Doctrine was not intended to provide a state with thousands of acres of dry land when the _____ changes.

23. In question 21, the Supreme Court awarded the exposed lands to Bonelli under the _____ _____.

24. In question 21, the Supreme Court made no determination with respect to _____, _____, or _____ actions of the river. What was determined was the State's claim under the _____ _____ _____.

25. In 1977, the Supreme Court made an important decision in Oregon v. Corvallis Sand and Gravel Company. What was it? _____

_____.

26. The Corvalis case involved an ejectment action by the State of Oregon against the Corvallis Sand Company because the Corvallis Sand Co. was

_____.

27. The Supreme Court agreed with the twenty-six states Amicus Briefs that asserted that the Bonelli decision violated long-standing precedent. The Supreme Court stated, "Our analysis today leads us to conclude that our decision to apply _____in Bonelli was incorrect."

28. Corvallis also referred to the Supreme Court's 1935 decision in Borax, Ltd. versus Los Angeles in such a way as to logically integrate the Hughes and Bonelli decisions. In Borax, the Supreme Court stated that the boundary between upland and tideland is determined by Federal law. In Corvallis, the Supreme Court stated that Federal law only fixes those boundaries _____. Thereafter, the land is subject to the laws of the _____.

29. Of the two disputed parcels in Corvalis, the second parcel known as Fischer Cut was the more important. The Oregon judiciary believed it was bound by _____.

30. In Corvallis, the Fischer Cut was claimed by all of the lower courts to be entitled with Corvallis Sand Company using Federal Avulsion Doctrine. Oregon State's argument was that the State's title moved with the river. The Supreme Court stated that the interpretation of the avulsion-accretion relationship should be done under _____, not _____.

31. It is important to note that the Supreme Court decision in Corvalis was not unanimous. The dissenting opinion was that title passed according to _____.

32. In 1979 the U.S Supreme Court issued a decision in Roy Tibbals Wilson v. Omaha Indian Tribe and State of Iowa v. Omaha Indian Tribe. The case is more commonly called Blackbird Bend. In 1854 the Omaha Indian Reservation in Nebraska was established. Because of a change in the Missouri River's course, an avulsion-accretion question arose over the disputed land. The Federal District Court's decision stated that 1.) _____ _____ 2.) _____.

33. The Court of Appeals reversed the District Court diecision by applying _____. Rationales used included 1.) _____ _____ _____ and 2.) _____ _____.

34. Even though the Supreme Court held in Blackbird Bend that Federal law could control the disposition of this case, it further held that there was no reason why _____ _____ should not be honored as the _____ _____ of decision here.

35. The Supreme Court said in Blackbird Bend, "We perceive no need for a uniform national rule to determine whether changes in the course of a river affecting riparian land owned or possessed by the United States have been _____ or _____."

LESSON 1 - Avulsion, Accretion, and Reliction Surveys

ANSWERS TO REVIEW QUESTIONS

1. 1) provide historical background of riparian surveys, 2) summarize important laws, 3) examine cases, and 4) integrate the knowledge.
2. English common laws.
3. coastal tideland rights.
4. seacoast grants did not include tidelands.
5. tidelands were owned by the Crown unless otherwise shown.
6. equal footing
7. 1) navigability and 2) whether State or Federal law applies.
8. useful for commerce.
9. navigability
10. to inland waters.
11. navigable in fact, highways for commerce.
12. were accredited to the states.
13. 1) Texas, Spanish and Mexican Land Grants before 1837 and 2) Nebraska - private ownership of beds of navigable water.
14. 1) long-standing reputation, and 2) judicial recognition.
15. the bed of the watercourse is directly involved.
16. state, adjoining land owners.
17. state, state-owned bed.
18. federally
19. federally
20. navigable water, accretion formed along the shore.
21. Equal Footing Doctrine
22. thread of a navigable stream

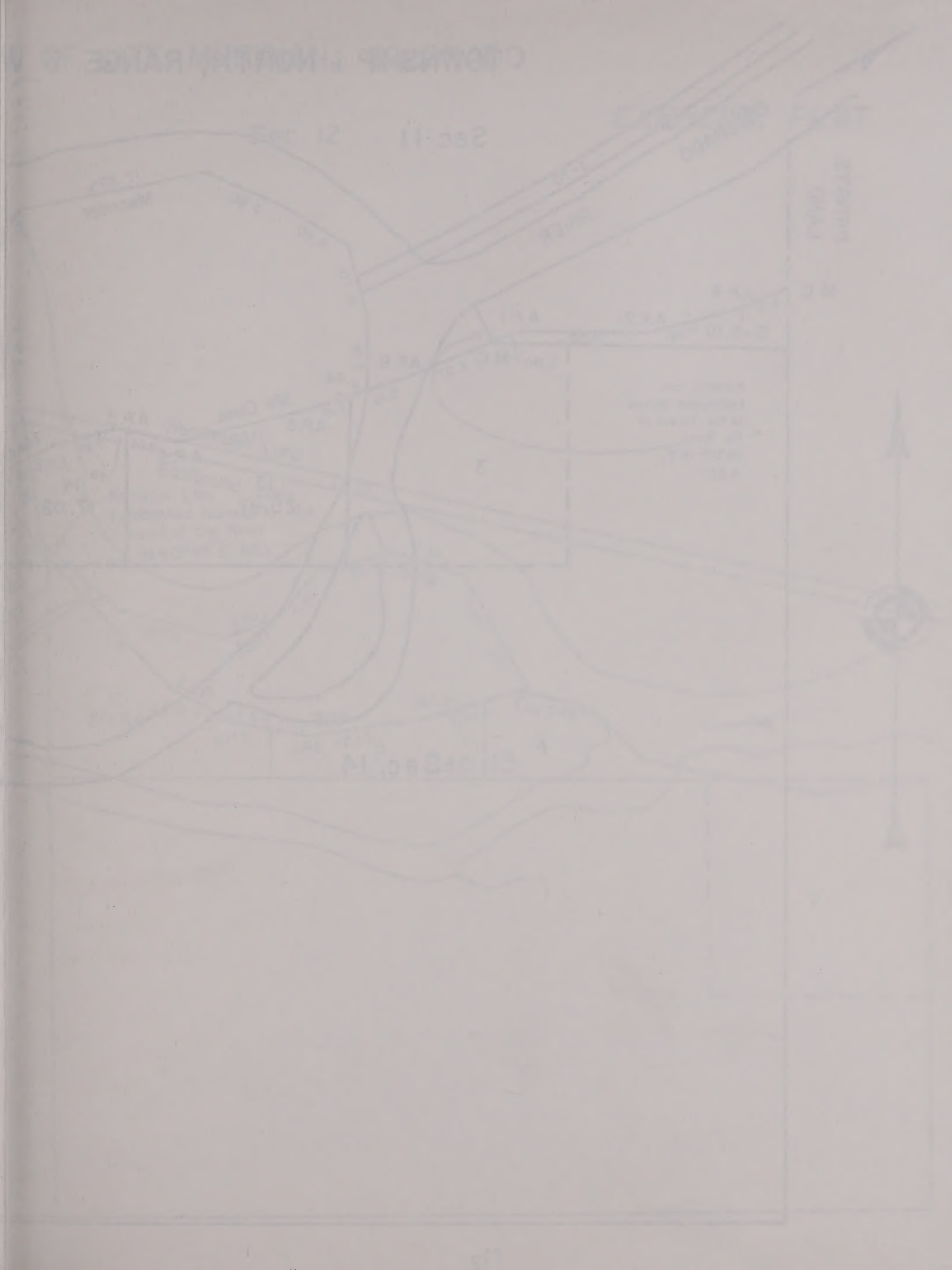
ANSWERS TO REVIEW QUESTIONS, Continued

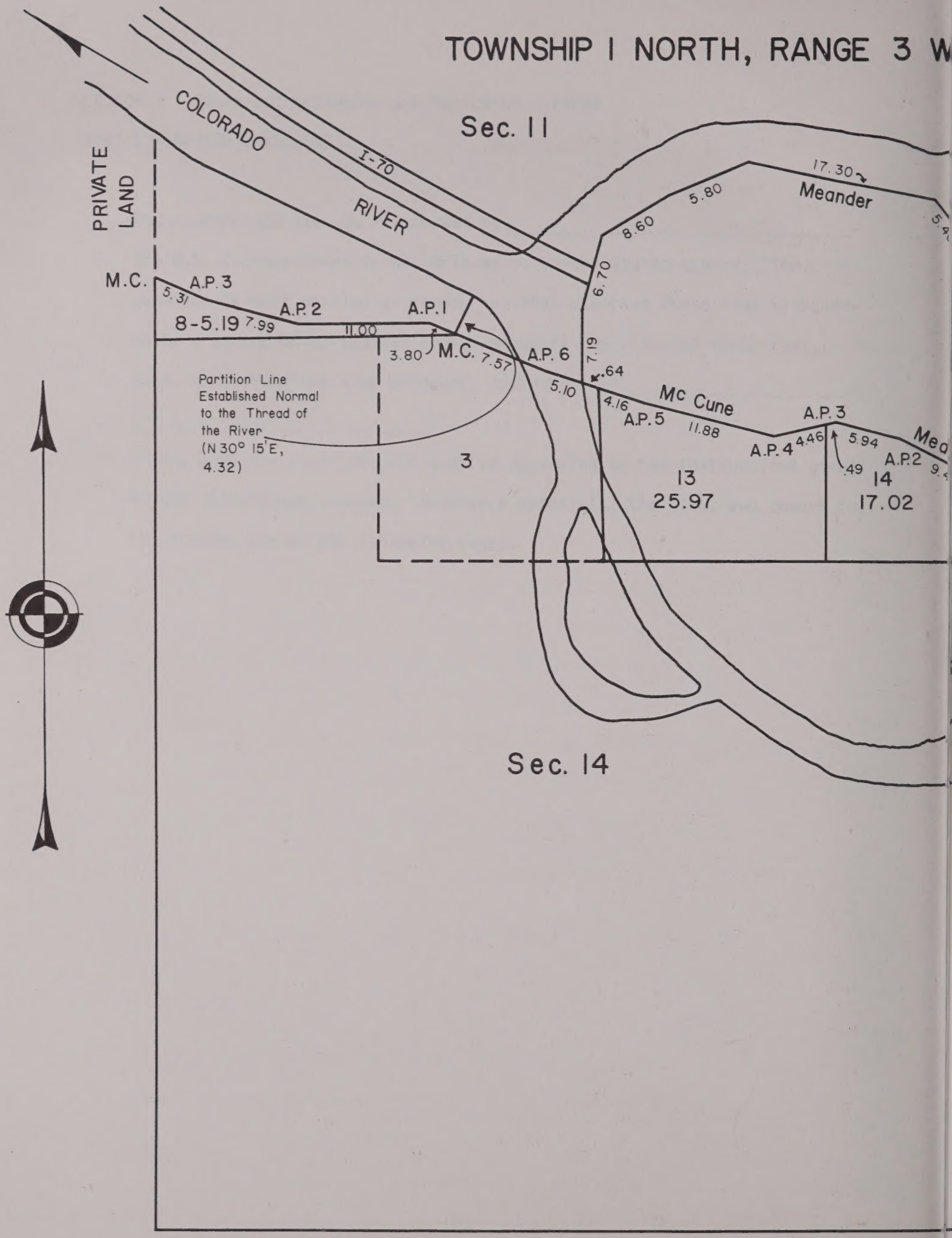
23. Accrection Doctrine.
24. Accretion, avulsion, reemergence, Equal Footing Doctrine.
25. Reversed The Bonelli Decision.
26. taking materials out of the navigable Willamette River without a lease.
27. Federal common law
28. at statehood, State.
29. Federal common law.
30. State law, Federal.
31. Federal law.
32. 1) State rather than Federal law applied, 2) changes were accretive under Nebraska law.
33. Federal law. 1) interstate boundary involved, 2) Indian reservation land protected by Federal law.
34. State law, Federal rule.
35. Avulsive, accretive.

LESSON 2 - Avulsion, Accretion and Reliction Surveys

PART 1 - REVIEW QUESTIONS

1. Roman accretion law was reinforced by _____.
2. The U.S. Supreme Court in New Orleans v. United States stated, "The question is well settled at common law that a person whose land is bounded by a stream which changes course gradually by alluvial formations, shall still hold the same boundary, including the _____ _____.
3. Please work the exercise plat problem according to the instructions given in the slide/sound program. Reference materials, the plat, and anwers to the problem are on the following pages.

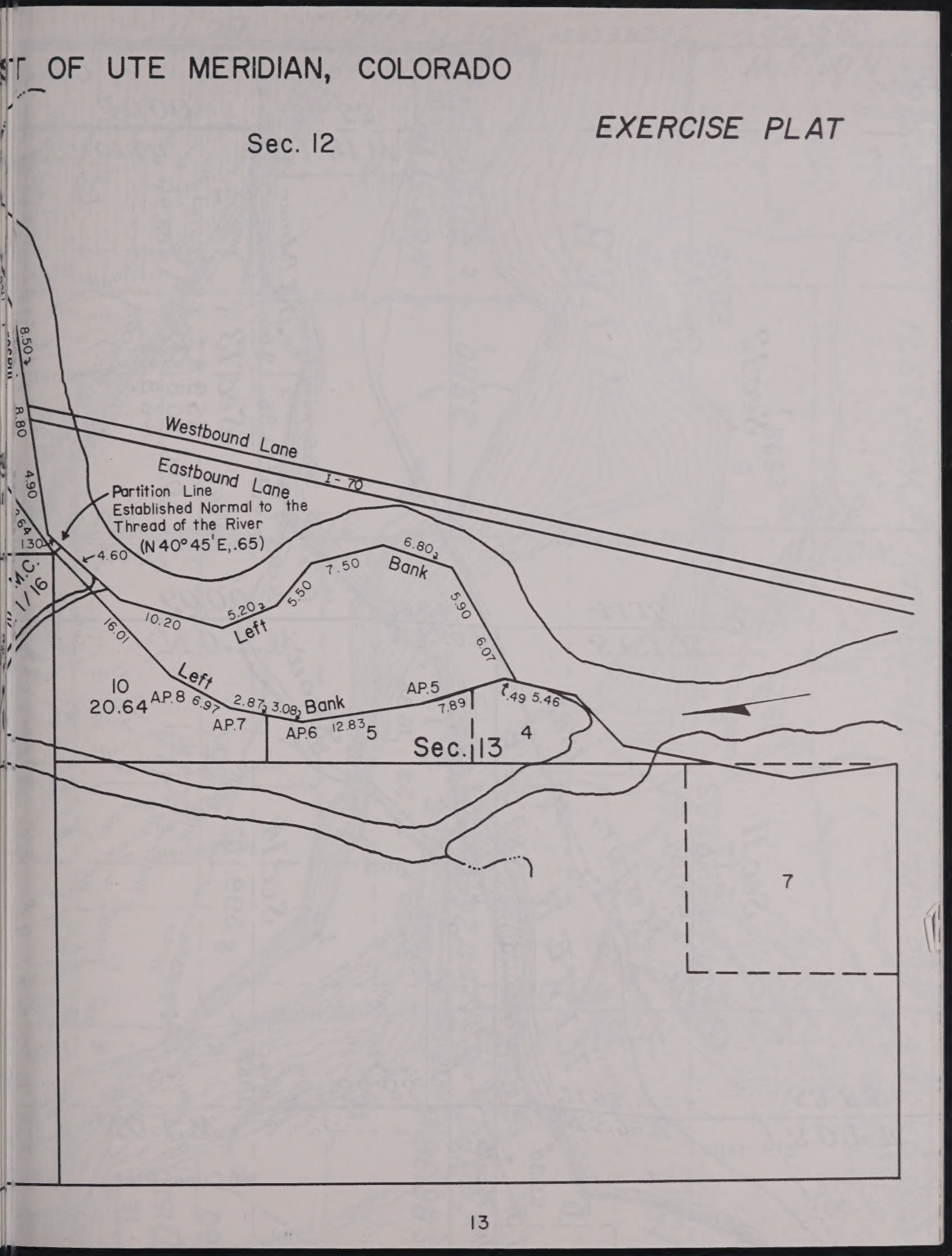


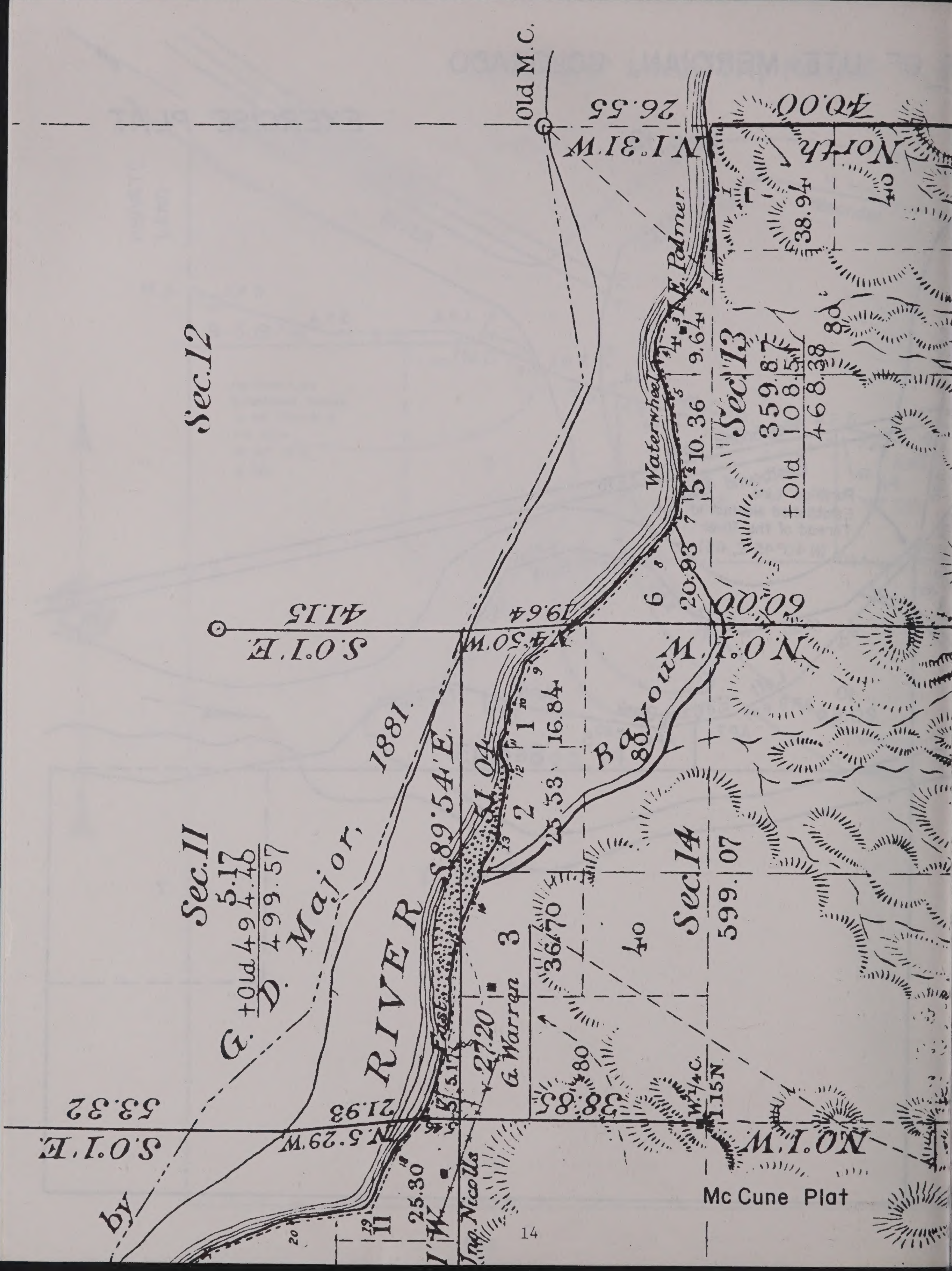

TOWNSHIP 1 NORTH, RANGE 3 W
Sec. 11
COLORADO
I-70
RIVER
PRIVATE LAND
M.C.
A.P. 3
A.P. 2
A.P. 1
5.31
8-5.19
7.99
11.00
3.80
M.C.
7.57
A.P. 6
7.19
.64
5.10
4.16
A.P. 5
11.88
Mc Cune
A.P. 3
A.P. 4
4.46
5.94
A.P. 2
.49
Meander
17.30
5.80
8.60
6.70
Partition Line Established Normal to the Thread of the River (N 30° 15' E, 4.32)
3
13
25.97
14
17.02
Sec. 14

T OF UTE MERIDIAN, COLORADO

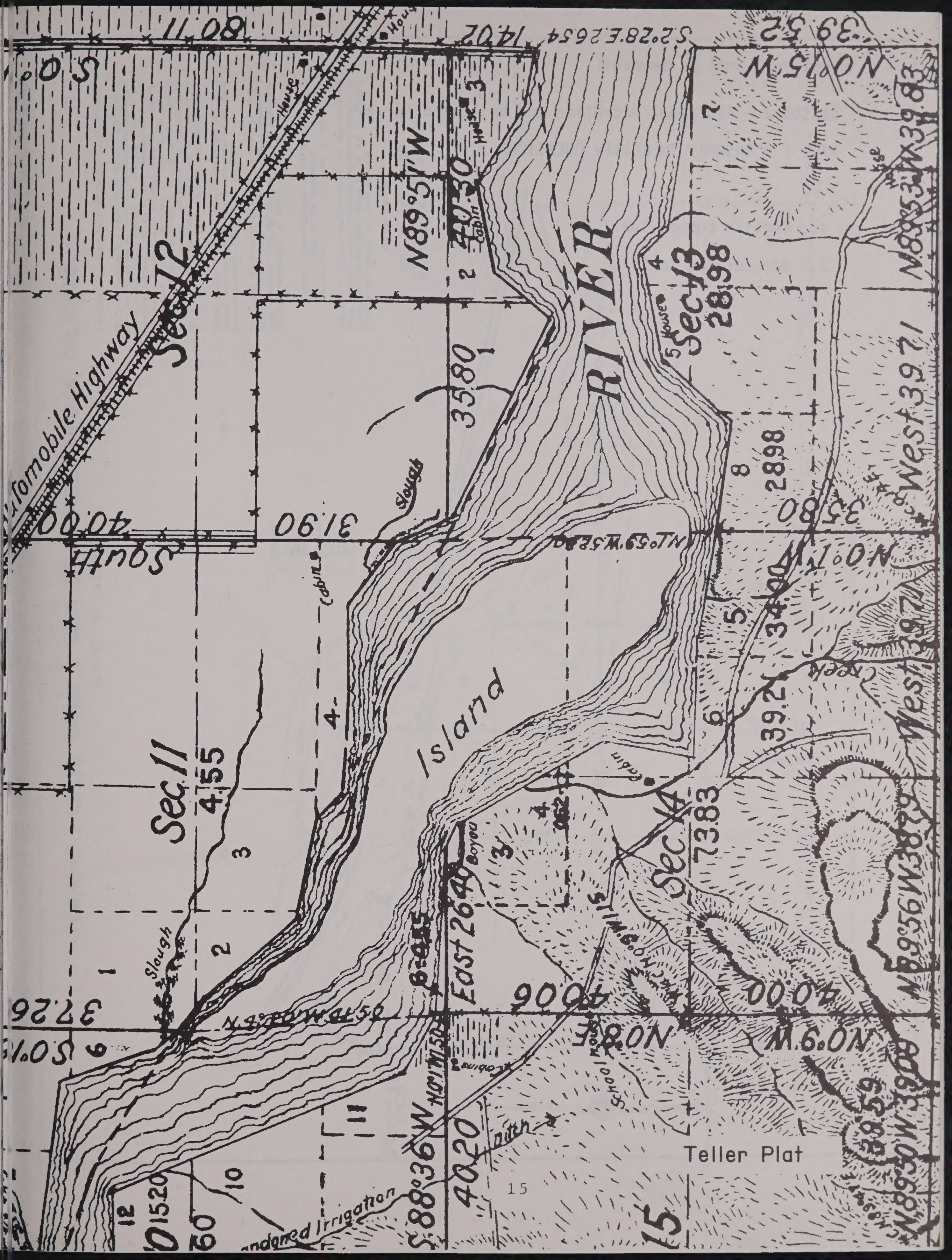
Sec. 12

EXERCISE PLAT




Old M.C.
26.55
40.00
N.1°31.W.
North
38.94
E. Palmer
Waterwheel
Sec.12
Sec.13
359.87
+Old 108.51
468.38
9.64
10.36
20.93
60.00
41.15
S.0°1.E.
19.64
N.4.50.W.
N.0°1.W.
Bayou
16.84
1881.
S.89°54'E.
Major,
RIVER
Sec.11
G. +Old 494.40
5.17
D. 499.57
Sec.14
599.07
36.70
38.85
27.20
G. Warren
East
W ¼ C.
1.15N.
N.0°1.W.
53.32
S.0°1.E.
21.93
N.5.29.W.
25.30
Jno. Nicolls
by

Mc Cune Plat



Automobile Highway
Sec 12
RIVER
Sec 13
Island
Sec 11
Sec 14
Slough
Cabin
House
School House
Bayou
Path

Teller Plat

LESSON 2 - Avulsion, Accretion and Reliction Surveys

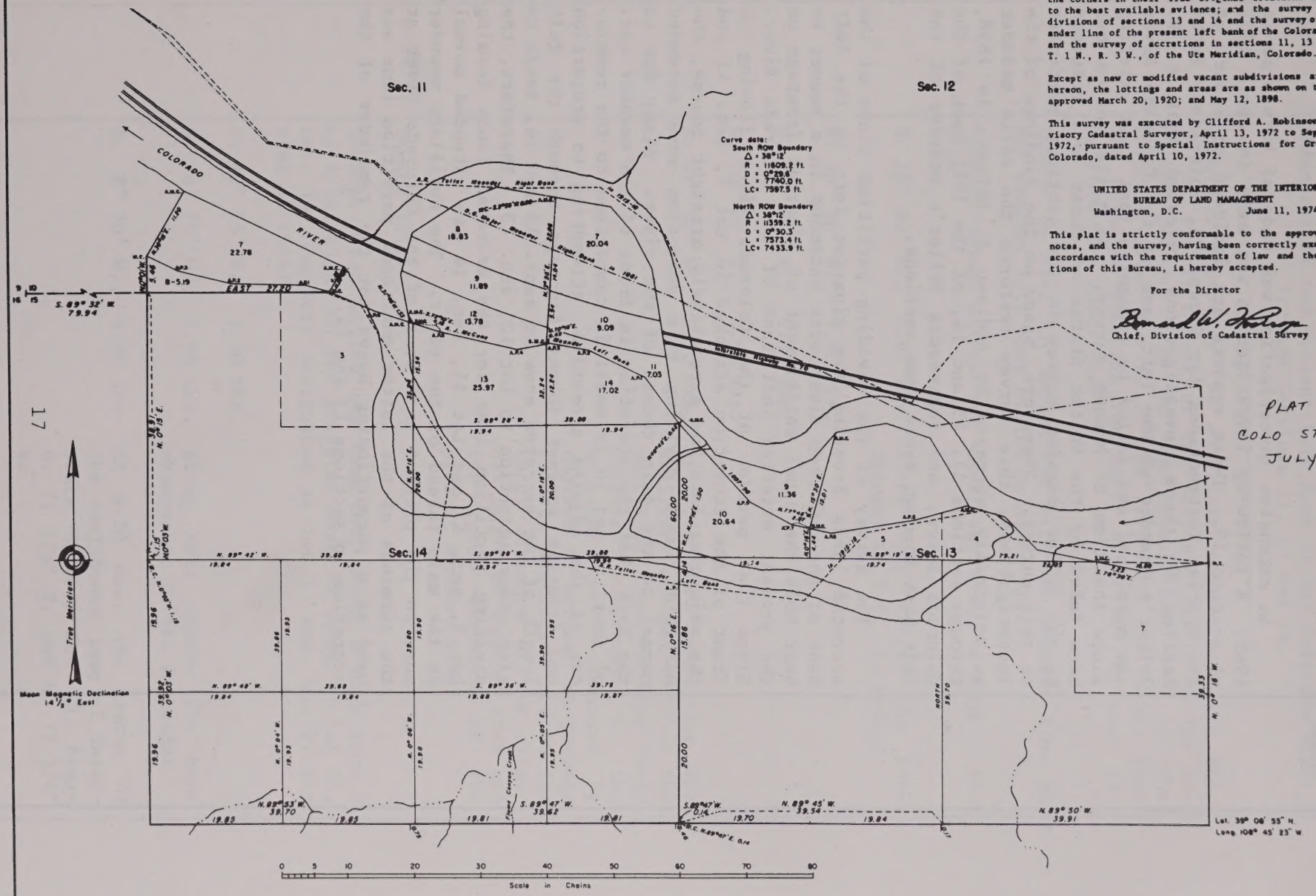
PART 1 - ANSWERS TO REVIEW QUESTIONS

1. English common law.
2. accumulated soil.

ORIGINAL

TOWNSHIP 1 NORTH, RANGE 3 WEST OF THE UTE MERIDIAN, COLORADO.

SURVEY OF ACCRETIONS



A history of surveys is contained in the field notes.

This plat represents a dependent resurvey of portions of sections 11, 13 and 14, south of the Colorado River, and the meanders of left bank of the Colorado River as returned by Addison J. McCune in 1898, designed to restore the corners in their true original locations according to the best available evidence; and the survey of subdivisions of sections 13 and 14 and the survey of the meander line of the present left bank of the Colorado River and the survey of accretions in sections 11, 13 and 14 in T. 1 N., R. 3 W., of the Ute Meridian, Colorado.

Except as new or modified vacant subdivisions are shown hereon, the lottings and areas are as shown on the plats approved March 20, 1920; and May 12, 1898.

This survey was executed by Clifford A. Robinson, Supervisory Cadastral Surveyor, April 13, 1972 to September 7, 1972, pursuant to Special Instructions for Group 593, Colorado, dated April 10, 1972.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Washington, D.C. June 11, 1974

This plat is strictly conformable to the approved field notes, and the survey, having been correctly executed in accordance with the requirements of law and the regulations of this Bureau, is hereby accepted.

For the Director

Bernard W. Rupp
Chief, Division of Cadastral Survey

PLAT FILED
COLO STATE OFFICE
JULY 5, 1974

Answer to Problem No. 3

T. 1 N., R. 3 W., Ute Mer., Colo.

CHAINS

An extensive investigation was made of this area in 1969. A follow-up investigation was made in April 1972 of section 13. These reports are included as a part of the Special Instructions for Group 593, Colorado. Facts derived by these investigations revealed that A. R. Teller's meander of the left bank of the Colorado River was misplaced and failed to recognize fast land existing since the time of McCune survey. No title action has been taken by the United States on those lots returned by the Teller meander survey in the sections pertinent to this survey. Therefore, based on the findings of the investigations, this survey restores the valid meander as originally surveyed by Addison J. McCune, in 1898, through sections 11, 13 and 14, of the left bank of the Colorado River, and supersedes Teller's meander of the left bank through these same sections.

The survey of the dividing partition lines of the accreted lands fronting the riparian lots on the left bank of the Colorado River were extended in a manner to best hold the equal entitlement of riparian frontage on the present existing left bank of the Colorado River. Since that portion of the Colorado River flowing in front of the accretion attached to Lot 7, sec. 11 and the adjoining lots has a relatively straight course, the partition lines dividing this accretion were extended normal to the main thread of the river. Also, due to the fact that the accretion in front of the meander cor. of secs. 13 and 14 is small in comparison to the remainder of the adjoing accretion, attempting to proportion new frontage against former frontage through the full length of the accreted area in secs. 13 and 14, tends to give undue accretion to Lot 10, sec. 13. Therefore, the dividing partition line for the accreted lands forming Lot 9, sec. 13 and Lot 11, sec. 14 was extended normal to the main thread of the river. The auxiliary meander cor. on the present left bank of the Colorado River at the terminus of the latter mentioned partition line was used as a porportioning bases for the remainder of the accretion in sections 13 and 14.

CHAINS

Meanders of the Present Left Bank of the Colorado River, through Sections 11, 13 and 14.

From the point for the auxiliary meander cor. in sec. 13, on the left bank of the Colorado River, on the adjusted meander line on the former left bank of the Colorado River and S. 73° 58' E., 0.49 chs. dist. from the adjusted position for angle point No. 4, sec. 13, hereinbefore described.

Thence in sec. 13, downstream with the meander line of the present left bank of the Colorado River.

Through dense willow and tamarisk, along a bank 2 ft. high.

N. 28° 00' W.,	6.07 chs.	Along this course the bank changes to 5 ft. in height.
N. 30° 30' W.,	5.90 chs.	
N. 71° 30' W.,	6.80 chs.	
S. 79° 45' W.,	7.50 chs.	
S. 41° 30' W.,	5.50 chs.	At 0.12 chs. point for the auxiliary meander cor. on the partition line dividing lands accreted subsequent to the original survey executed by Addison J. McCune, at proportionate distance based on the total distance of the original adjusted meander line and the total distance of the present meander line.

Thence in sec. 14.

Through dense willow and tamarisk, along a bank from 2 to 4 ft. high, on the accreted area in front of Lot 14, sec. 14 (formerly designated as Lot 1, sec. 14, by the plat of 1898).

N. 49° 15' W.,	1.30 chs.	
N. 8° 15' W.,	4.90 chs.	Along this course the bank changes to 10 ft. in height.
N. 8° 30' W.,	8.80 chs.	At 6.20 chs. the center of the east-bound lane of Interstate Highway No. 70, bears S. 77 1/4° E. and N. 77 1/4° W.

CHAINS		
		At 7.70 chs. the center of the west-bound lane of Interstate Highway No. 70.
	N. 9° 00' W., 8.50 chs.	Along this course the bank changes to 4 ft. height.
	N. 27° 45' W., 5.90 chs.	
	N. 40° 30' W., 5.40 chs.	
	N. 80° 00' W., 17.30 chs.	At 8.34 chs. the true point for the auxiliary meander cor., on the partition line dividing land accreted subsequent to the original survey executed by Addison J. McCune, at proportionate distance based on the total distance of the original meander line and the total distance of the present menader line.
	S. 69° 00' W., 5.80 chs.	
	S. 57° 15' W., 8.60 chs.	
	S. 16° 00' W., 6.70 chs.	Along this course the bank becomes rocky and changes to 12 ft. in height.
		At 3.30 chs. the center of the west-bound lane of Interstate Highway No. 70, bears S. 64 3/4° E. and N. 64 3/4° W.
		At 4.80 chs. the center of the east-bound lane of Interstate Highway No. 70.
		At 6.00 chs. a right-of-way fence line, extends S. 64 3/4° E., enter scattered willow and proceed along a bank 3 ft. high.
	S. 10° 15' E., 7.19 chs.	At 6.06 chs. the point for the auxiliary meander cor., on the partition line dividing land accreted subsequent to the original survey executed by Addison J. McCune, at proportionate distance based on the total distance of the original meander line and the total distance of the present meander line.

LESSON 2 - Avulsion, Accretion and Reliction Surveys

PART 2 - REVIEW QUESTIONS

1. Land uncovered by a gradual subsidence of water is a/an _____; however, it is governed by the law of _____.
2. Two legal concepts considered in the Lake Winnemucca, Nevada case were _____ v. _____ and _____.
3. Lake Winnemucca was dry before _____ and after _____.
4. It was generally agreed that Lake Winnemucca was, in a legal sense _____ when _____.
5. In summary, the relicted lands in T. 24 N., R. 23 E. were surveyed on the basis that:
   1.) Federal holdings are _____.
   2.) Private lands patented when they were riparian to lake waters are _____.
   3.) Private lands patented after a recession of the waters are _____.

LESSON 2 - Avulsion, Accretion and Reliction Surveys

PART 2 - REVIEW QUESTIONS, Continued

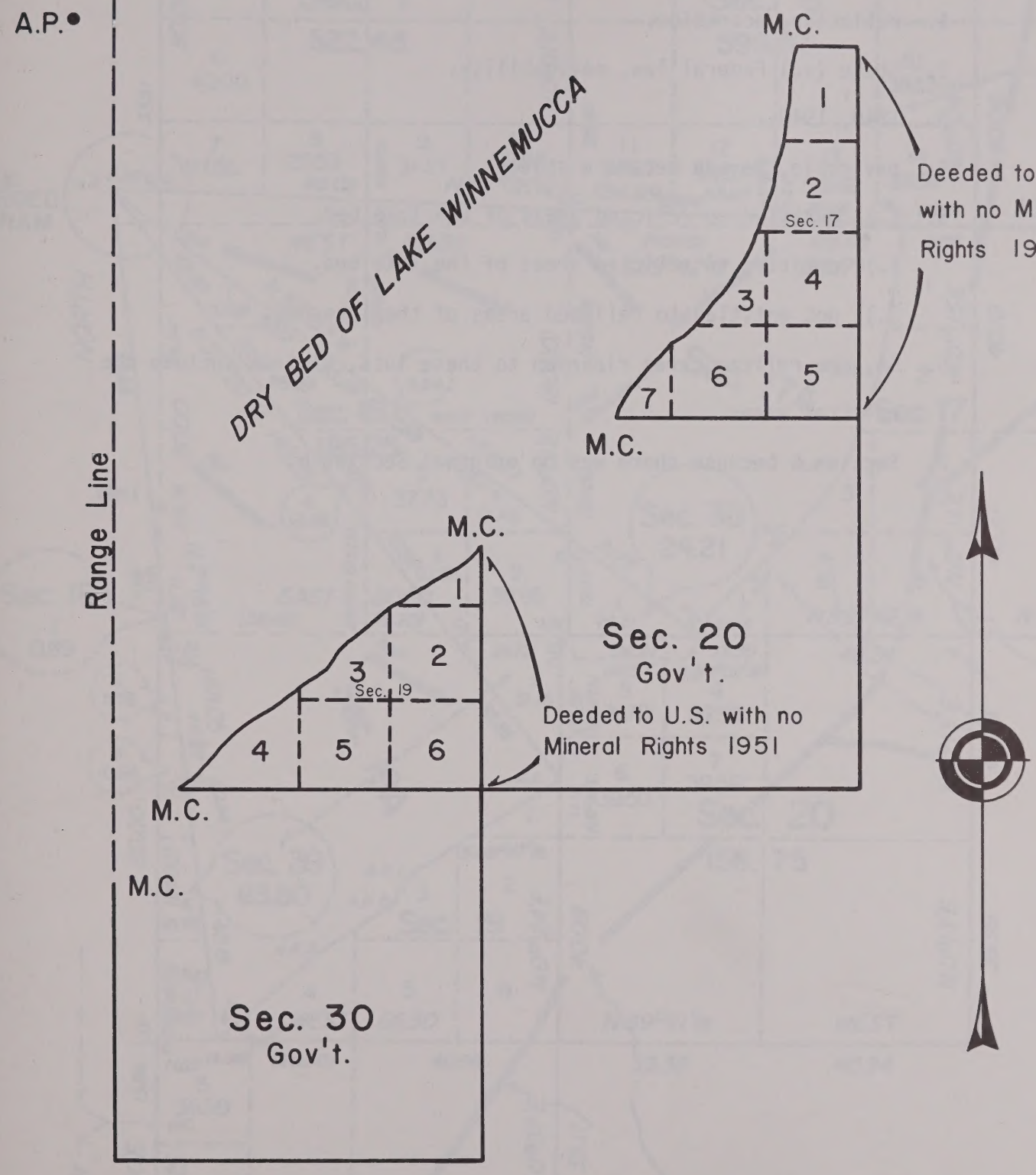
6. Lots 1 through 5 of Section 5, T. 24 N., R. 24 E. were patented at a time when the meander line was the water's edge. The lots were subsequently reconveyed to the Federal government. A section designated _____ covering _____ was surveyed because the reconveyed lots _____ _____.

7. Should Section 38 or Section 6 be used to designate the dry lake bed in the northwest portion of T. 24 N., R. 24 E.?

8. Please work the exercise plat problem which follows. Sketch the approximate locations of partition and section lines in the dry bed of the lake.

TOWNSHIP 24 NORTH, RANGE 24 EAST OF THE MOUNT DIABLO MERIDIAN, NEVADA

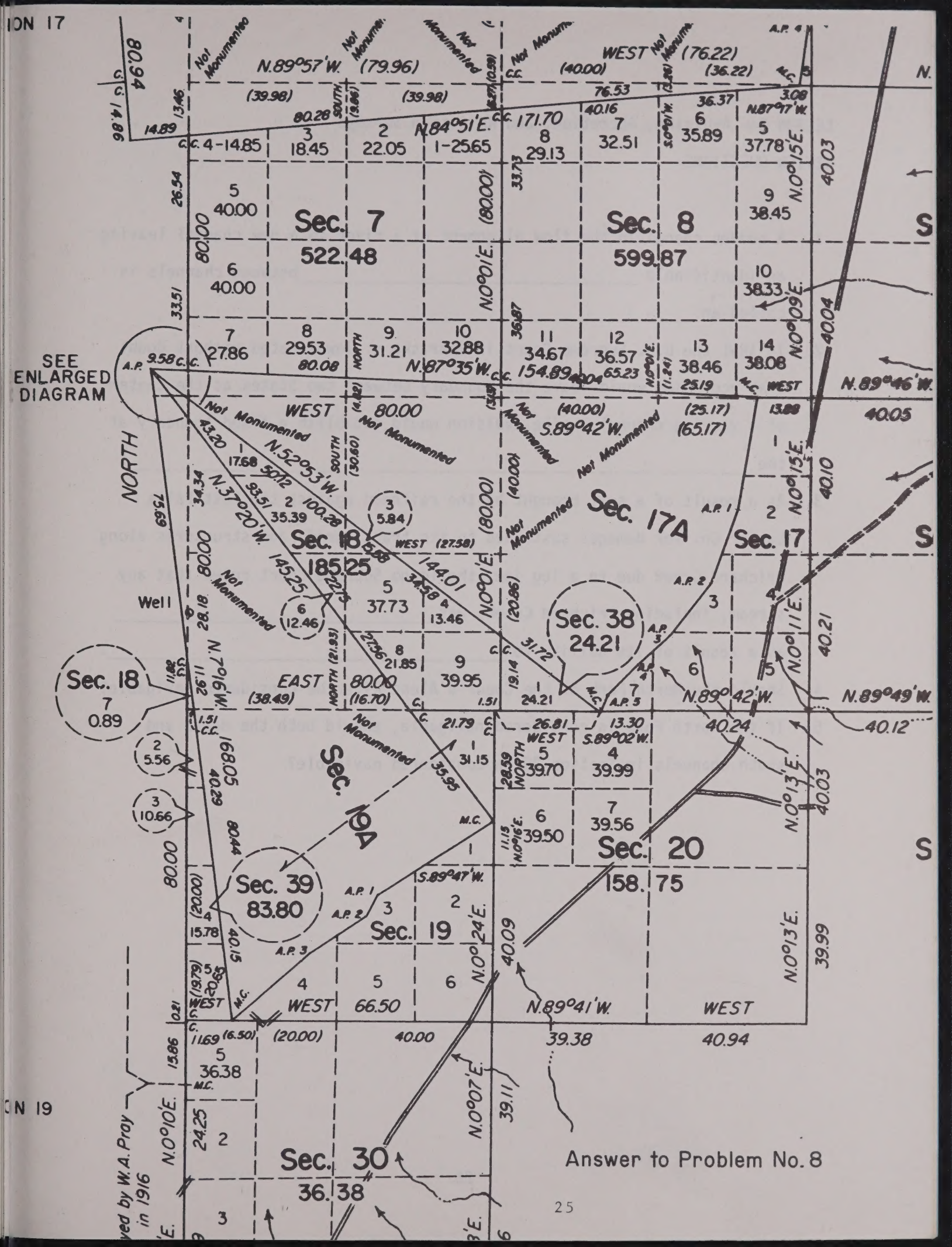
EXERCISE PLAT



LESSON 2 - Avulsion, Accretion and Reliction Surveys

PART 2 - ANSWERS TO REVIEW QUESTIONS

1. reliction, accretion.
2. State (v.) Federal law, navigability.
3. 1840, 1940.
4. navigable, Nevada became a state.
5. 1.) entitled to relicted areas of the lake bed.
   2.) entitled to relicted areas of the lake bed.
   3.) not entitled to relicted areas of the lake bed.
6. 5A, the relicted area riparian to these lots, did not include the relicted areas.
7. Section 6 because there was no original Section 6.


Sec. 7
522.48
Sec. 8
599.87
Sec. 17A
Sec. 17
Sec. 18
185.25
Sec. 18
0.89
Sec. 38
24.21
Sec. 19A
Sec. 39
83.80
Sec. 19
Sec. 20
158.75
Sec. 30
36.38
SEE ENLARGED DIAGRAM
Well
NORTH
EAST
WEST
SOUTH
Not Monumented
N.89°57'W. (79.96)
WEST (76.22)
N.84°51'E.
N.87°35'W.
S.89°42'W.
N.89°46'W.
N.89°42'W.
N.89°49'W.
S.89°47'W.
S.89°02'W.
N.89°41'W.
N.52°53'W.
N.37°20'W.
N.19°10'W.
N.0°01'E.
N.0°15'E.
N.0°09'E.
N.0°11'E.
N.0°13'E.
N.0°24'E.
N.0°10'E.
N.0°07'E.
Answer to Problem No. 8

LESSON 3 - Avulsion, Accretion, and Reliction Surveys

REVIEW QUESTIONS

1. A sudden change in the flow alignment of a river to a new channel leaving an identifiable _____between channels is called an _____.
2. In 1891 the U.S. Supreme Court in Nebraska v. Iowa stated without doubt that accretion would leave the boundary between two States as the center of a varying channel, while avulsion would establish a fixed boundary at the _____.
3. As a result of a suit brought by the railroad against the Post Falls Lumber Co. for damages sustained to its track, grade and structures along Prichard Creek due to a log jam, the Idaho Supreme Court ruled that any stream, including Prichard Creek, was _____ as a result of its ability to _____.
4. Should the North Fork of the Coeur d'Alene River be considered navigable?
5. If the North Fork is considered navigable, should both the north and south channels in Section 25 be considered navigable?

LESSON 3 - Avulsion, Accretion and Reliction Surveys

ANSWERS TO REVIEW QUESTIONS

1. upland area, avulsion.
2. center of the abandoned channel.
3. navigable, float logs to market.
4. & 5. See correspondence, pages 29, 30 and 31. Note: When reading this correspondence, the student should interpret "North Fork" as north channel in order to conform with the terminology in the slide/tape program.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Memorandum

To: Chief, Cadastral Survey Examination and Approval Staff (D-401)

From: _____

Subject: Survey Procedures Involving Raparian Problems - Group 506, Idaho.

_____
_____.

Two questions were posed by the _____ Office in the original transmittal:

1) Is the north channel (of the Coeur d'Alene River) considered to be navigable if the main channel of the river is navigable?

2) Should the survey be expanded to include areas in Sec. 26, 35 and 36?

This memorandum is addressed to the first question only.

Mr. _____'s report properly reaches the conclusion the Coeur d'Alene River is navigable (page 5, paragraph 6) based on a local court decision. Because the main stream is navigable does not necessarily require that an anabranch, such as the North Fork, also be navigable. It would seem that the question of navigability of the North Fork should be determined by the conditions of the North Fork itself.

Examination of the aerial photographs of the bed of the North Fork (using photos CF-9-63 and CF-9-65 dated 7-3-37) suggests that as of 1937 there was still some flow such as from local runoff or though the log culvert.

I recommend that the North Fork of the Coeur d'Alene River be treated as a nonnavigable river and that each upland owner be considered as taking to the median line of the meandered channel for the following reasons:

a) The design of the railroad provides some indications of the nonnavigable condition of the North Fork as of the time of railroad construction in 1908. First, consider the 1908 bridge in lot 4, section 25. Its waterway area was evidently designed to provide runoff capacity for Hopkins Creek plus the flow of the North Fork of Coeur d'Alene River consequently the engineers chose a pile bridge 100 feet in length at a skew angle of about 45 degrees. At this same time the engineers chose to install a culvert of 10 foot width set normal to the tracks but skewed only 30 degrees from the alignment of the record channel at the upper end of the North Fork.

The ratio of carrying capacity (waterway area) is nearly 10 to 1 for a bridge compared to the culvert. The location engineer apparently determined that Hopkins Creek would be the major source of runoff and that the North Fork carried only occasional flows at high water.

b) Because of momentum considerations, rivers do not usually have active side channels (chute channels or anabranches) where there is one straight channel having a sharp 90° side channel unless some restriction exists immediately downstream which causes a backwater effect at higher flows. The backwater supplies head to force flow through the side channel.

This general statement can be applied to the North Fork as the 90° branch. Mr. _____'s observation that the borrow area used in the railroad construction provided a "shallow channel for the water to follow" is entirely reasonable in such a circumstance. The shallow channel no doubt relieved the restriction immediately downstream which originaly caused the anabranch. After the relief the North Fork recieved less and less water and eventually reached its present condition.

All this also points to a conclusion that the North Fork received substantial flow only at high water and was probably not navigable in its ordinary condition.

c) From the time of railroad construction of the culvert until the present (a period of 70 years) it appears there has been no protest from the State of Idaho or any citizen interested in the use of the North Fork for navigation. The State does not loose its right to declare a culvert, such as the one installed by the railroad, a nuisance to navigation so that such nonaction is not conclusive, but it is somewhat persuasive.

d) The burden of proof is usually on the person who might claim the North Fork of the river is navigable. Mr. _____'s investigation apparently unearthed no clear evidence of navigability or susceptibility for navigation. Probably the State of Idaho could do no better.

Clear and convincing evidence seems available to substantiate the avulsion from the South Fork channel to a new channel along the railroad right-of-way line and into the North Fork Channel.

Not so clear, however, is the assertion that the North Fork even as a navigable stream ceased flowing because of an avulsion. For an avulsion to be complete it is usually required that the water cease to run in the old channel or at least become stagnant. This has not been definitely established.

If the flow in the North Fork as a navigable stream gradually and imperceptibly were reduced to zero the so-called "Island Rule Exception" to the Doctrine of Accretion might be relied upon to produce the same result as would have occurred had the change been caused by an avulsion. I find no cases exactly on the point of a nonnavigable channel on one side of an island with a navigable channel on the other but the principle would be identical. In the case where the abandoned channel was nonnavigable each upland owner owned to the center of that channel anyway.

If the North Fork actually and in fact stopped flowing by reliction, there is no problem on the reach between the old railroad bridge and the culvert.

The reach on downstream from the old railroad bridge is a different matter, however. During the period it would be expected that the flow diminish in the upper reach, this channel was occupied by the avulsed South Fork flow (since 1909 per report). Certainly this reach could not be in process of relicting but, at the same time, an avulsion cannot work a change of boundaries on the upland owners who front on the North Fork.

All these situations reach the same end results where the North Fork was a nonnavigable stream. Each upland owner takes to the medial line of the stream. Although some upland owners must suffer the flow of the South Fork, as avulsed, it did not change their boundaries. If evidence were available as to erosion and accretion of the North Fork between the time of original survey and the cessation of flow of the North Fork, by avulsion or reliction, the medial line should be determined from those banks. In absence of such information the best evidence of the bank positions would be the record meanders and a median line of the North Fork determined from the record could be used.

cc: 420 RF


CADASTRAL SURVEY
COOPERATIVE TRAINING